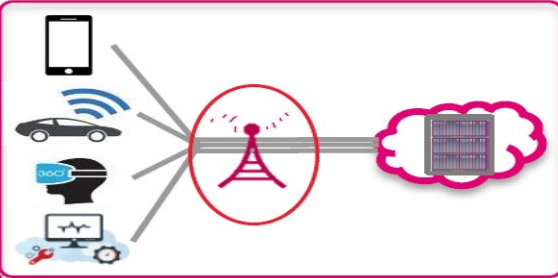


**EXHIBIT \_ – INFRINGEMENT CONTENTIONS**  
**U.S. PATENT NO. 9,918,196 – CLAIM 1**

Claim 1	Corresponding Structure in Accused Methods
<p>1. A method of providing navigation assistance to a user of a communications device, the method comprising:</p>	<p>T-Mobile (including Metro PCS) wireless telecommunications network including the E911 service (including the infrastructure needed to provide the service) that the said wireless network provides, constitutes the “Accused Method”.</p> <p>The “method of providing navigation assistance to a user of a communications device” refers to the method by which T-Mobile’s E911 provides navigation assistance (directions) to a user of a communications device (example: mobile phone, smartphone, laptop, tablet, PC etc.).</p> <p>The said “communications device” (the user of the said “communications device”) is a subscriber of T-Mobile (including Metro PCS) wireless telecommunications network services and T-Mobile E911 service.</p> <p>Further, T-Mobile E911, Wi-Fi Calling solution also provides navigation assistance (directions) to a user of a communications device (example: mobile phone, smartphone, laptop, tablet, PC etc.) including the (E911, Wi-Fi Calling solution) or including a browser plugin enabling access to the (E911, Wi-Fi Calling solution) website or having other means to access the (E911, Wi-Fi Calling solution) website, for querying and receiving navigation instructions from a starting location (current location of the communications device) to a destination location.</p> <p><b>T-Mobile USA</b> uses <b>Nokia Eden-NET SON</b> for optimizing the performance of its wireless telecommunications network. The said wireless telecommunications network being any or any combination of <b>GSM, WCDMA</b> and <b>LTE (2G, 3G, 4G and LTE)</b> wireless networks. For this purpose, <b>Nokia Eden-NET SON</b> is integrated or interfaced with <b>T-Mobile’s</b> wireless telecommunications network. When integrated or interfaced with the said wireless telecommunications network, <b>Nokia Eden-NET SON</b> imparts Self-Optimizing or Self-Organizing Network capabilities to the said wireless telecommunications network.</p> <p>The term “wireless network” refers to <b>T-Mobile USA’s</b> wireless telecommunications network interfaced/integrated and enabled with <b>Nokia Eden-NET SON</b>.</p> <p>Plaintiff contends that a system of computers comprises wireless device location elements, including but not limited to one or more of position determination entities (PDE), mobile location/positioning centers, mobile switching center, location proxy servers, locations applications, location agents, GPS server, Wi-Fi server, home location register, visiting location register, one or more of which are used in locating a wireless device. The various location elements are T-Mobile components, T-Mobile subsidiaries or family of companies, vendors, partners and the like. The various location elements are meant to work across one or more of all technologies, including 2G, 3G, 4G, and 5G.</p>

**EXHIBIT \_ – INFRINGEMENT CONTENTIONS**  
**U.S. PATENT NO. 9,918,196 – CLAIM 1**

Claim 1	Corresponding Structure in Accused Methods
	<p data-bbox="338 245 1331 272">The following exemplifies the existence of this limitation in Accused Method:</p> <div data-bbox="921 354 1484 776"><p data-bbox="1052 662 1346 743"><b>Network Architecture</b></p></div> <p data-bbox="338 878 1205 906"><b>Attachment 12 (Journey to 5G –T-Mobile US Perspective) at 11.</b></p>

**EXHIBIT \_ – INFRINGEMENT CONTENTIONS**  
**U.S. PATENT NO. 9,918,196 – CLAIM 1**


Claim 1	Corresponding Structure in Accused Methods
	<div data-bbox="627 256 1829 1081" style="border: 1px solid black; padding: 10px;"> <p><b>CommsMEA staff writer, June 14th, 2016</b>  Henrique Do Vale, head of sales, applications and analytics, MEA, Nokia explains how Nokia Eden-NET SON solution allows operators to innovate on top of the open framework.</p> <p><b>CommsMEA: Tell us about Nokia Eden-NET?</b></p> <p>Nokia Eden-NET is a leading Self-Organising Network (SON) solution in the industry with a truly multivendor and multi-technologies approach and a most user-friendly GUI interface. Nokia EdenNET SON can run in open loop or with close loop mode, fully automated and with minimum intervention. Nokia believes that service providers should leverage SON for all network and all layers of radio technology, since it leads to better network quality and better network availability for the end user.</p>  <p><b>T-Mobile USA has been leveraging Nokia Eden-NET SON.</b> During T-Mobile's SON evaluation process, Eden-NET SON solution simultaneously ensured dropped calls are only fewer, increased throughput, and reduced leakage – even as measured across entire markets, which had been previously well optimised. <b>With Eden-NET SON solution T-Mobile has seen improvements in its network.</b></p> <p>Another leading operator has achieved the following by deploying Nokia Eden-NET SON: improvement of handover success-rate by 20%; 5% improvement on voice capacity (Voice Erlangs); 15% reduction in dropped call rates to name a few indicators. These improvements have directly translated into Opex and Capex efficiencies, along with customer satisfaction and bringing a positive impact on its revenues.</p> </div> <p><b>Attachment 16 (Enhanced agility for evolving networks) at 1.</b></p>

EXHIBIT \_ – INFRINGEMENT CONTENTIONS  
U.S. PATENT NO. 9,918,196 – CLAIM 1

Claim 1	Corresponding Structure in Accused Methods
	<div data-bbox="585 240 1824 865"><p>Eden-NET is a new layer of cloud software intelligence for GSM, WCDMA, and LTE wireless networks. Eden-NET performs centralized, multi-vendor, multi-technology Self Organizing Networks (SON). It dynamically adapts wireless networks to optimally meet the demands of active subscribers.</p><p>With its comprehensive external systems integration and patented SON algorithms, Eden-NET performs autonomous network optimizations, workflow automation, network reliability automation, and dynamic network adaptation.</p><p>The solution provides a complete SON operating system as well as an established toolbox of essential SON Modules. Eden-NET is highly extensible, enabling effective customization of existing SON modules and creation of new SON modules. It provides a data adapter functionality block, offering its services through a specific API following a Service Oriented Architecture Model.</p><p>The Eden-NET architecture and functionality have been influenced by leading mobile operators to fully meet their needs and it has been field-proven. Eden-NET delivers the ultimate in mobile network performance, reliability, and operational efficiencies.</p></div> <p data-bbox="331 954 940 992"><b>Attachment 17 (Eden-NET User Guide) at 8.</b></p> <p data-bbox="613 971 1730 1052">Fig. 3C Nokia Eden-NET SON (Exhibit C) – A centralized SON solution for autonomously optimizing performance of wireless cellular telecommunications networks (Example: GSM, WCDMA and LTE wireless networks). {Source: Attachment #7 (Pg. 8)}</p>

EXHIBIT \_ – INFRINGEMENT CONTENTIONS  
U.S. PATENT NO. 9,918,196 – CLAIM 1

Claim 1	Corresponding Structure in Accused Methods
	<div><p>The diagram illustrates a network architecture. At the top center is a cloud labeled 'Internet'. Below it, on the left, is a box labeled 'SGSN'. To its right is a box labeled 'HSS'. A solid line labeled 'Gr' connects SGSN and HSS. Below SGSN are two boxes: 'BSC' and 'RNC'. Solid lines labeled 'Gb' and 'Iu-c' connect SGSN to BSC and RNC respectively. Below BSC are two antenna icons labeled 'BTS'. Below RNC are two antenna icons labeled 'NB'. To the right of HSS is a box labeled 'MME'. A dashed line labeled 'S8a' connects HSS and MME. Below MME is a box labeled 'P-GW'. A dashed line labeled 'S11' connects MME and P-GW. To the right of P-GW is a box labeled 'S-GW'. A solid line labeled 'S5' connects P-GW and S-GW. Below MME and S-GW are two antenna icons labeled 'eNB'. Dashed lines labeled 'S1-c' and 'S1-u' connect MME and S-GW to the eNBs. To the right of the eNBs is a box labeled 'Eden-NET'. Below Eden-NET are three boxes: '2G OSSs', '3G OSSs', and '4G OSSs'. A solid line connects Eden-NET to these OSSs. A dashed line connects the eNBs to the OSSs. A solid line labeled 'SGi' connects the Internet cloud to P-GW. A dashed line connects the Internet cloud to S-GW. A dashed line connects the eNBs to the Internet cloud.</p></div> <p>Attachment 18 (Eden-Net with iSON Manager) at 8.</p>

EXHIBIT \_ – INFRINGEMENT CONTENTIONS  
U.S. PATENT NO. 9,918,196 – CLAIM 1

Claim 1	Corresponding Structure in Accused Methods
	<div><p>***</p><p>Eden-NET Commercial OSS level SON server operates across 3GPP defined Itf-N operations and maintenance interfaces and does not require any direct connection to individual wireless base stations (BTS, NodeB, eNodeB). This architecture provides SON automation for new and existing commercial wireless networks including 2G, 3G, and 4G systems.</p><p><b>Attachment 19 (NokiaEDU Eden-NET Overview Course (2017)) at 10.</b> (Unless otherwise indicated, yellow highlighting and red solid lines and circles in this chart have been added for emphases).</p></div>

EXHIBIT \_ – INFRINGEMENT CONTENTIONS  
U.S. PATENT NO. 9,918,196 – CLAIM 1

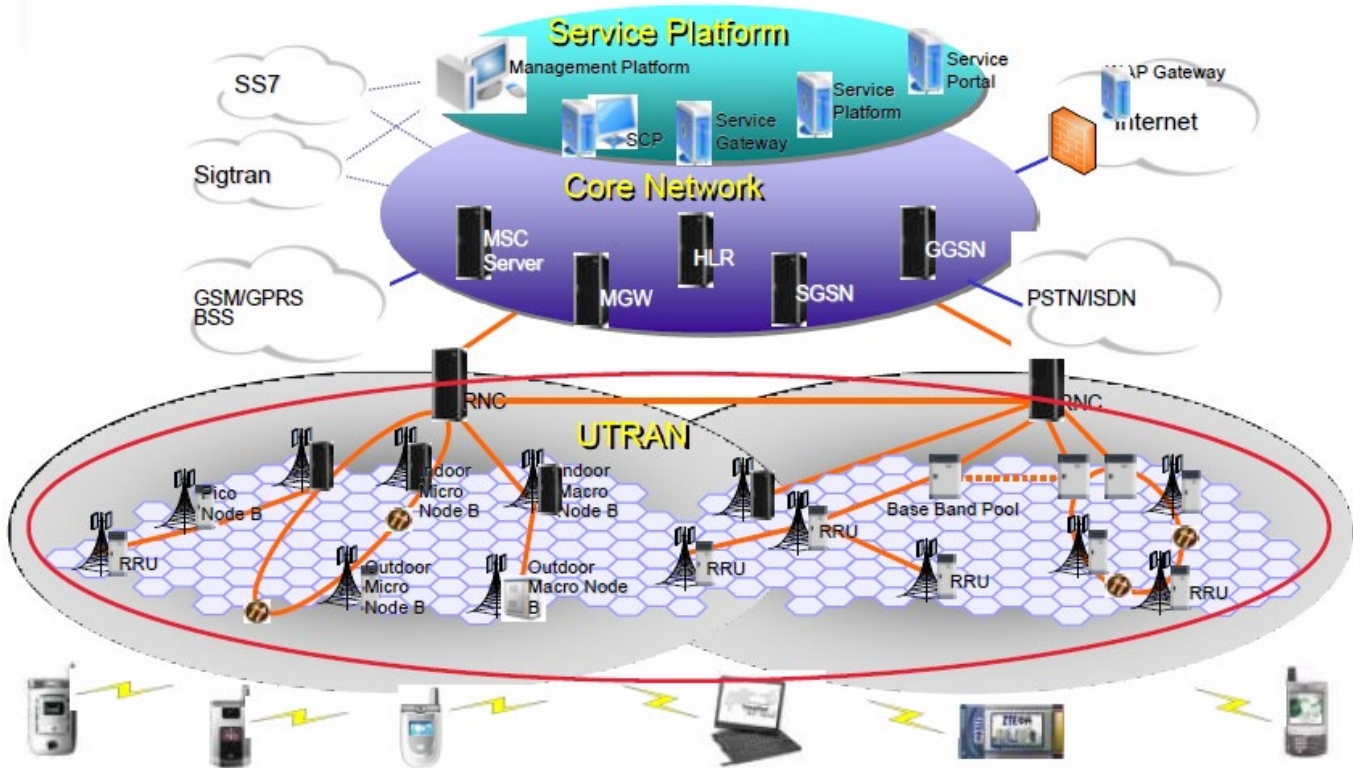
Claim 1	Corresponding Structure in Accused Methods
	<div></div> <p>Attachment 20 (Introduction to Nokia NetAct) at 5 of 82.</p>

EXHIBIT \_ – INFRINGEMENT CONTENTIONS  
U.S. PATENT NO. 9,918,196 – CLAIM 1

Claim 1	Corresponding Structure in Accused Methods
	<div>Interim Text to 9-1-1 ~ Network Design</div> <p>The diagram illustrates a network architecture for interim text-to-9-1-1 services. It is divided into three main sections: T-Mobile, TCS, and PSAP connections.</p> <ul style="list-style-type: none"><li><b>T-Mobile (Grey Box):</b> Contains a Subscriber (mobile phone), a Radio Tower, an LBS (Location Based Services) unit, an SMSC (Short Message Service Center), and an MSC (Mobile Switching Center). The LBS is connected to the Radio Tower via MLP (Mobile Location Protocol). The SMSC is connected to the Radio Tower via SMPP (Short Message Peer-to-Peer). The MSC is connected to the SMSC.</li><li><b>TCS (Light Blue Box):</b> Contains a GIS DB (Geographic Information System Database), Provisioning, Report Portal, and an SMS E911 Call Server. The SMS E911 Call Server is connected to the LBS, the GIS DB, and the Provisioning. The Report Portal is connected to the SMS E911 Call Server. The TCS is connected to the MSC via a ToIP Gateway.</li><li><b>Other Gateway:</b> A separate gateway unit connected to the TCS via a ToIP Gateway.</li><li><b>ESRP (Emergency Service Routing Platform):</b> A yellow box connected to the TCS via SIP SIMPLE and SIP PIDF-LO protocols.</li><li><b>ESINET (Emergency Service Internet):</b> A cloud representing the internet, connected to the ESRP and the PSAP connections.</li><li><b>PSAP Connections (Orange Box):</b> Four PSAPs are shown, each connected to the ESRP via different protocols:<ul style="list-style-type: none"><li>PSAP with TTY: Connected via TTY Over Existing Trunks.</li><li>PSAP's: Connected via TTY Over Existing Trunks.</li><li>PSAP with CPE: Connected via TTY Over Existing Trunks.</li><li>PSAP with GEM 9-1-1 Web Portal: Connected via HTTPS.</li><li>PSAP connected via ESINET: Connected via ESINET.</li></ul></li></ul>

Attachment 7 (T-Mobile Text to 9-1-1 Services (2014)) at 9.

**EXHIBIT \_ – INFRINGEMENT CONTENTIONS**  
**U.S. PATENT NO. 9,918,196 – CLAIM 1**

Claim 1	Corresponding Structure in Accused Methods
	<div data-bbox="338 245 663 282">What is Basic 9-1-1 service?</div> <div data-bbox="1094 253 1129 282">✓</div> <div data-bbox="338 410 806 448">What is Enhanced 9-1-1 Phase I service?</div> <div data-bbox="1094 418 1129 448">^</div> <div data-bbox="338 485 1079 1265"> <p>Enhanced 9-1-1 Phase I service is the first step in providing better emergency response service to wireless 9-1-1 callers. Public Safety/9-1-1 Communications Centers need to send a letter to T-Mobile requesting Phase I service deployment at their agency. Once Phase I service has been implemented, when a wireless 9-1-1 call comes into the 9-1-1 Communications Center (also called a Public Safety Answering Point or PSAP), the call-taker's computer screen will show the wireless phone's 10-digit call-back number if one has been assigned to the calling handset. In the event the wireless phone call is dropped, the call-taker may contact the caller. Phase I service also identifies the cell site/sector location information that the call was originated on to the call-taker's computer screen. This provides the call-taker with a general location (i.e. within the site coverage area) of the caller. The handset must have battery power and be in a coverage area to complete a 9-1-1 call.</p> </div> <div data-bbox="338 1279 999 1317">Attachment 9 (9-1-1 safety (webpage, 2019)) at 2.</div> <div data-bbox="1255 245 1738 282">What is Enhanced 9-1-1 Phase II service?</div> <div data-bbox="1255 321 2007 1052"> <p>Public Safety/9-1-1 Communications Centers need to send a letter to T-Mobile requesting Phase II service deployment at their agency. With Phase II service, the location information that is provided to the 9-1-1 Communications Center is the approximate X, Y (longitude, latitude) location of the handset making the 9-1-1 call. This location information is typically more accurate than the Phase I location information (cell site/sector). As with Phase I, Phase II service allows call-takers to receive both the caller's wireless phone number and their estimated location information. Since early 2004, T-Mobile has been deploying Phase II services. T-Mobile utilizes a hybrid solution, referred to as U-TDOA, Uplink-Time Difference of Arrival and AGPS, Assisted Global Positioning System, to provide an estimated Phase II location to the 9-1-1 Communications Center. The handset must have battery power and be in a coverage area to complete a 9-1-1 call.</p> </div> <div data-bbox="1255 1182 1598 1219">What is Text to 9-1-1 service?</div> <div data-bbox="1255 1260 1877 1284"> <p>Please voice call to 9-1-1 is your best option during an</p> </div>

**EXHIBIT \_ – INFRINGEMENT CONTENTIONS**  
**U.S. PATENT NO. 9,918,196 – CLAIM 1**

Claim 1	Corresponding Structure in Accused Methods
	<p data-bbox="674 248 1619 342"><b>What level of 9-1-1 service will I receive using WiFi Calling service?</b></p> <p data-bbox="674 383 1738 1317">When you make a 9-1-1 call with a WiFi Calling enabled phone, your phone will first attempt to complete the call like any other phone in the T-Mobile network. Depending on the capabilities of your local 9-1-1 Communications Center, you may receive Wireless Enhanced Phase I, Phase II, or Basic 9-1-1 service as described above. T-Mobile works very closely with the 9-1-1 Communication Centers to deploy the best possible 9-1-1 service supported by the 9-1-1 Communication Centers. If you are at your registered location (as described above) and wireless coverage is unavailable, your phone will try to complete the 9-1-1 call using special WiFi Calling functionality. Your location is one of a number of methods which may be used to route your 9-1-1 call and provide your location to the designated 9-1-1 Communications Center. Therefore, it is very important to keep the registered address information current. Your location information can be provided and/or updated by accessing your account at My T-Mobile or by contacting T-Mobile Customer Care.</p> <p data-bbox="331 1325 1031 1357"><b>Attachment 9 (9-1-1 safety (webpage, 2019)) at 7, 8.</b></p>

**EXHIBIT \_ – INFRINGEMENT CONTENTIONS**  
**U.S. PATENT NO. 9,918,196 – CLAIM 1**

Claim 1	Corresponding Structure in Accused Methods
	<div data-bbox="457 246 1144 365"> <p><b>330 Million Americans Rely on Enhanced 911 Services</b></p> </div> <div data-bbox="457 393 1171 609"> <p>Mobile phones play an important role in personal and public safety, allowing people to easily reach out to emergency services, family or friends. Mobile connectivity can be a lifeline for people and first responders when reacting to natural and man-made disasters, as well as accidents and threats to communities.</p> </div> <div data-bbox="457 646 1180 868"> <p>Enhanced 911 (also called E911) is a federally-mandated program that seeks to improve the accuracy and reliability of wireless 911 by providing dispatchers with additional location information. E911 is regulated by the Federal Communications Commission and is initiated by jurisdictional request.</p> </div> <div data-bbox="457 901 1150 1031"> <p>The deployment of E911 requires network upgrades and coordination among public safety agencies, wireless carriers, technology vendors, equipment manufacturers, and local wireline carriers.</p> </div> <div data-bbox="457 1096 1129 1344"> <p><b>240 million calls are made to 911 in the U.S. each year, and in many areas 80% or more are from wireless devices. (National Emergency Number Association, NENA)</b></p> </div> <div data-bbox="331 1344 1108 1383"> <p><b>Attachment 4 (Smart Communities plan for mobile) at 1.</b></p> </div> <div data-bbox="1218 246 1579 300"> <p><b>Looking to the Future</b></p> </div> <div data-bbox="1218 332 1444 370"> <p>According to 911.gov:</p> </div> <div data-bbox="1218 409 1942 625"> <p><i>For more than 40 years, the 911 system has served the needs of the public in emergencies. Next Generation 911 (NG911) will enhance the 911 system to create a faster, more flexible, resilient, and scalable system that allows 911 to keep up with communication technology used by the public.</i></p> </div> <div data-bbox="1218 662 1911 880"> <p><i>While the technology to implement NG911 systems is available now, the transition to NG911 involves much more than just new computers. Implementing NG911 will include activities of many people, who will coordinate efforts to plan and deploy a continually evolving system of hardware, software, standards, policies, protocols and training.</i></p> </div> <div data-bbox="1218 912 1942 998"> <p><i>The National 911 Program supports the effort of jurisdictions at all levels of government as they consider the transition to NG911.</i></p> </div> <div data-bbox="1218 1036 1894 1253"> <p>New technologies and policies will continue to enhance these capabilities. In fact, a roadmap agreement reached by the wireless industry and public safety advocates in late 2014 will lead to more accurately locating indoor 911 callers, as well as providing a vertical estimate for callers in high-rise buildings.</p> </div>

**EXHIBIT – INFRINGEMENT CONTENTIONS**  
**U.S. PATENT NO. 9,918,196 – CLAIM 1**

Claim 1	Corresponding Structure in Accused Methods
<p>receiving, by a directional assistance service, an Internet query initiated at the communications device and directed via the Internet to initiate a request for navigational assistance to a destination;</p>	<p>The term “directional assistance service” herein refers to T-Mobile’s E911 services.</p> <p>The method of using the E911 for Navigation includes initiating a query at the communications device to initiate a request for navigational assistance to a destination, by specifying (inputting) the destination.</p> <p>The said query is directed via the Internet to the remote E911 server. In other words, the E911 service receives the said query through the Internet.</p> <p>Further, E911, Wi-Fi Calling Solution Navigation includes initiating a query at the communications device to initiate a request for navigational assistance to a destination, by specifying (inputting) the destination.</p> <p>The following exemplifies this limitation’s existence in Accused Method:</p> <p style="color: magenta; text-align: center; font-size: 1.5em;"><b>Interim Text to 9-1-1 ~ 3 Methods</b></p> <hr style="border: 1px solid magenta;"/> <p style="background-color: yellow;">Interim Text to 9-1-1 service will be delivered via one of the following ways:</p> <ul style="list-style-type: none"> <li>❖ <u>Web Services Method</u> ~ The PSAP will receive SMS message via an Internet portal, which requires a computer(s) with Internet access.</li> <li>❖ <u>TTY Method</u> ~ The PSAP will receive SMS messages (converted to ASCII) via existing 9-1-1 facilities, which may require additional trunking to the PSAP.</li> <li>❖ <u>NENA i3 / ESInets / MSRP Method</u> ~ The PSAP will receive SMS messages via Message Session Relay Protocol to an Emergency Services IP Network.</li> </ul> <p><b>Attachment 7 (T-Mobile Text to 9-1-1 Services (2014)) at 5.</b></p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin-top: 20px;"> <p>E911 received query by a different method. E.g. Web service, TTY and NENA.</p> </div>

**EXHIBIT \_ – INFRINGEMENT CONTENTIONS**  
**U.S. PATENT NO. 9,918,196 – CLAIM 1**

**Claim 1****Corresponding Structure in Accused Methods**

## Interim Text to 9-1-1 ~ PSAP Requirements

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### **PSAP Requirements for the Web Services Method:**

- Public Internet Access
- Bandwidth: At least 1.5 Mb/s / Business class
- Provide public IP addresses (Static IP' s for access to TCC' s 9-1-1 sites)
- Web browser capability (Internet Explorer 8, Chrome or Firefox)
  - If a firewall in place, PSAP must allow access to TCC IP addresses
- Verify/Provide GIS boundary for PSAP
- Sign End User License Agreement & Create user logins

### **PSAP Requirements for the TTY Method:**

- Existing Selective Router and ALI connectivity
- Customer Premise Equipment with TTY capability
- Public Internet Access
- Provide public IP addresses (Static IP' s for access to TCC Admin site)
  - Web browser capability (Internet Explorer 8, Chrome or Firefox)
  - If a firewall is in place, PSAP must allow access to TCC IP addresses and websites
- Verify/Provide GIS boundary for PSAP
- Augment trunking from Selective Router?

### **PSAP Requirements for the NENA i3 / ESInets / MSRP Method:**

- PSAP connectivity to the ESInet
- Provide PSAP/ESInet Provider boundaries & IP addresses
- IP capable CPE

*Id. at 6.*

**EXHIBIT \_ – INFRINGEMENT CONTENTIONS**  
**U.S. PATENT NO. 9,918,196 – CLAIM 1**

Claim 1	Corresponding Structure in Accused Methods
	<div data-bbox="508 245 1150 363"> <p><b>330 Million Americans Rely on Enhanced 911 Services</b></p> </div> <div data-bbox="508 391 1178 605"> <p>Mobile phones play an important role in personal and public safety, allowing people to easily reach out to emergency services, family or friends. Mobile connectivity can be a lifeline for people and first responders when reacting to natural and man-made disasters, as well as accidents and threats to communities.</p> </div> <div data-bbox="508 643 1178 813"> <p>Enhanced 911 (also called E911) is a federally-mandated program that seeks to improve the accuracy and reliability of wireless 911 by providing dispatchers with additional location information. E911 is regulated by the Federal Communications Commission and is initiated by jurisdictional</p> </div> <div data-bbox="344 857 648 1065"> <p>First responder gets the location information on their communication device.</p> </div> <div data-bbox="648 899 1150 1021"> <p>ment of E911 requires network upgrades and coordination safety agencies, wireless carriers, technology vendors, manufacturers, and local wireline carriers.</p> </div> <div data-bbox="508 1089 1136 1338"> <p>240 million calls are made to 911 in the U.S. each year, and in many areas 80% or more are from wireless devices. (National Emergency Number Association, NENA)</p> </div> <div data-bbox="331 1338 1108 1373"> <p><b>Attachment 4 (Smart Communities plan for mobile) at 1.</b></p> </div> <div data-bbox="1213 245 1554 298"> <p><b>Looking to the Future</b></p> </div> <div data-bbox="1213 334 1425 368"> <p>According to 911.gov:</p> </div> <div data-bbox="1213 407 1885 620"> <p><i>For more than 40 years, the 911 system has served the needs of the public in emergencies. Next Generation 911 (NG911) will enhance the 911 system to create a faster, more flexible, resilient, and scalable system that allows 911 to keep up with communication technology used by the public.</i></p> </div> <div data-bbox="1213 659 1860 872"> <p><i>While the technology to implement NG911 systems is available now, the transition to NG911 involves much more than just new computers. Implementing NG911 will include activities of many people, who will coordinate efforts to plan and deploy a continually evolving system of hardware, software, standards, policies, protocols and training.</i></p> </div> <div data-bbox="1213 911 1885 990"> <p><i>The National 911 Program supports the effort of jurisdictions at all levels of government as they consider the transition to NG911.</i></p> </div> <div data-bbox="1213 1031 1845 1242"> <p>New technologies and policies will continue to enhance these capabilities. In fact, a roadmap agreement reached by the wireless industry and public safety advocates in late 2014 will lead to more accurately locating indoor 911 callers, as well as providing a vertical estimate for callers in high-rise buildings.</p> </div>

**EXHIBIT \_ – INFRINGEMENT CONTENTIONS**  
**U.S. PATENT NO. 9,918,196 – CLAIM 1**

**Claim 1****Corresponding Structure in Accused Methods**

**Attachment 3 (Emergency response communications (2013)) at 2.**

## Emergency communications

A tornado has just hit a small, rural town, leaving many people injured and missing; gas mains are leaking; power lines are down and cell towers are out of service. An emergency command center must be established close to the site with a communications network so administrators can coordinate the various agencies rushing in to help.

T-Mobile's emergency communications solution lets first responders set up a base station out of the trunk of a vehicle, if needed, using trunk-based routers and satellite communication links to establish a secure, five-mile Wi-Fi zone. This lets police, fire, medical personnel, utility workers, volunteers and others coordinate their efforts and find ways to help the public throughout the emergency.

Whether due to a natural disaster, a terrorist attack or other situations requiring emergency response deployments, communications continuity is mission critical. And T-Mobile is here to help facilitate the mission.

T-Mobile and its trusted partners offer an emergency communications solution, which can include:\*

- Fleet of Wi-Fi-capable devices
- Wireless priority access
- Wi-Fi Calling
- Routers in vehicles producing Wi-Fi (radius of up to 5 miles)
- Satellite communications link
- External antenna
- GSM Command Phone — 3-watt base station with cordless handsets **(911 backup)**
- Dedicated account team



## Government communications

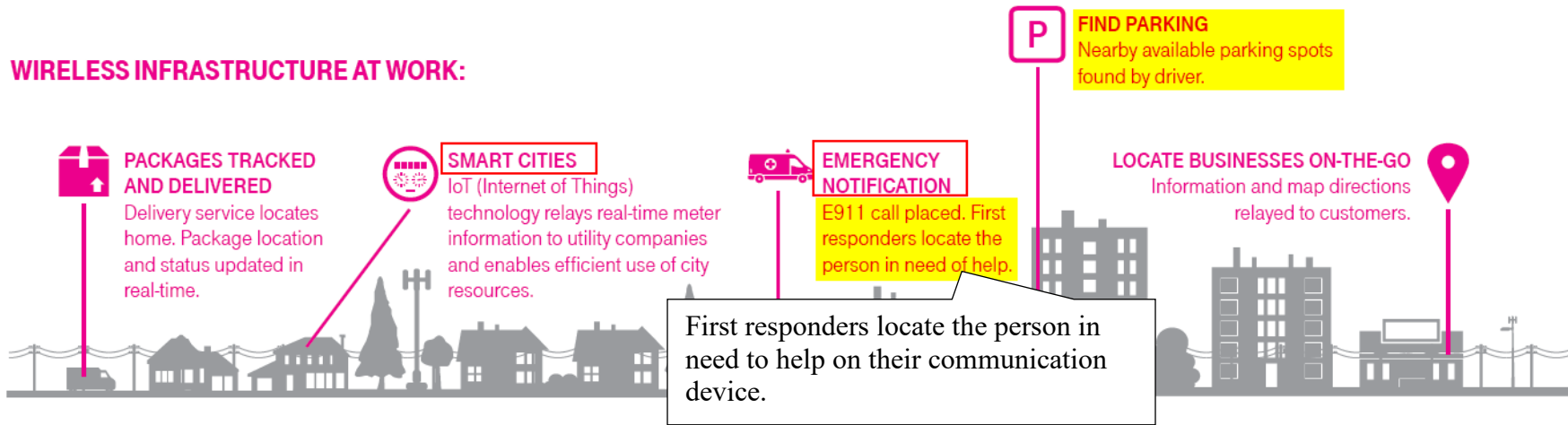
A building inspector in the field spots a problem in a major construction project — potentially requiring a shutdown. He is able to use his T-Mobile tablet to video the area of concern plus quickly turn relevant paperwork into digital documents — all of which he sends wirelessly to supervisors for immediate consultation.

T-Mobile offers a government communications package designed to provide field personnel with multiple voice and data communications options, whether for emergency or day-to-day operations.

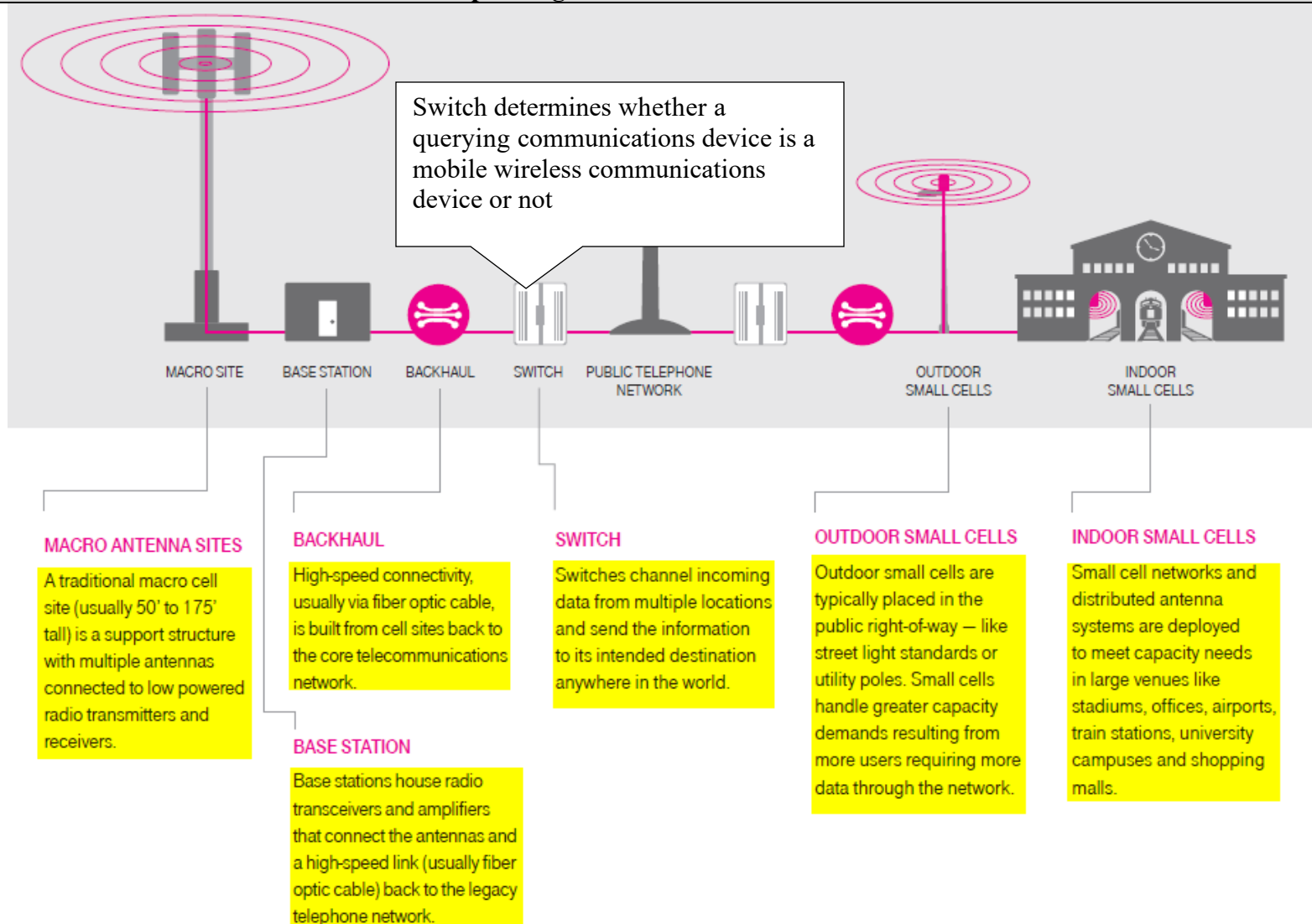
T-Mobile and its trusted partners support government communications needs,\* offering:

- Smartphones and/or tablets
- Wi-Fi Calling
- Enterprise messaging
- Ruggedized devices or cases
- Asset tracking (vehicle use and maintenance needs can be easily monitored)
- Push to Talk alternatives
- Radio communication options
- Applications that convert paper forms to digital format for mobile use
- Location-based services
- Private APN
- Biometrics, including facial recognition, iris scanning and fingerprinting

**EXHIBIT \_ – INFRINGEMENT CONTENTIONS**  
**U.S. PATENT NO. 9,918,196 – CLAIM 1**

Claim 1	Corresponding Structure in Accused Methods
	<p><b>WIRELESS INFRASTRUCTURE AT WORK:</b></p>  <p><b>PACKAGES TRACKED AND DELIVERED</b> Delivery service locates home. Package location and status updated in real-time.</p> <p><b>SMART CITIES</b> IoT (Internet of Things) technology relays real-time meter information to utility companies and enables efficient use of city resources.</p> <p><b>EMERGENCY NOTIFICATION</b> E911 call placed. First responders locate the person in need of help.</p> <p><b>FIND PARKING</b> Nearby available parking spots found by driver.</p> <p><b>LOCATE BUSINESSES ON-THE-GO</b> Information and map directions relayed to customers.</p> <p>First responders locate the person in need to help on their communication device.</p> <p><b>Attachment 5 (Property values &amp; wireless sites) at 1.</b></p>
<p>responsive to receiving the Internet query, determining whether or not the communications device is a mobile wireless communications device;</p>	<p>The E911 is programmed to identify the “phone type” (or device type) and the “mobile device identifier” of the communications device <b>[Exhibit B]</b> at which the said navigation query is initiated. In other words, the E911 determines whether or not the said communications device is a mobile wireless communications device <b>[Exhibit B]</b>.</p> <p>In other words, E911 can also ascertain whether the communications device at which the said navigation query is initiated, is connected to the E911 server through T-Mobile (including Metro PCS) wireless telecommunications network service (i.e. through RF signal-based communication) or through a Wi-Fi network supported by a fixed-line or wired broadband Internet service.</p> <p>In other words, T-Mobile (including Metro PCS) has means to determine whether a querying communications device is a mobile wireless communication device <b>[Exhibit B]</b> or not, and also whether the said communications device is connected to the T-Mobile server through T-Mobile (including Metro PCS) wireless telecommunications network service (i.e. through RF signal-based communication) or through a Wi-Fi network supported by a fixed-line or wired broadband Internet service.</p> <p>The following exemplifies this limitation’s existence in Accused Method:</p>

**EXHIBIT – INFRINGEMENT CONTENTIONS**  
**U.S. PATENT NO. 9,918,196 – CLAIM 1**

**Claim 1****Corresponding Structure in Accused Methods**

**Attachment 8 (Smart Communities Plan for Mobile (2017)) at 10.**

**EXHIBIT – INFRINGEMENT CONTENTIONS**  
**U.S. PATENT NO. 9,918,196 – CLAIM 1**

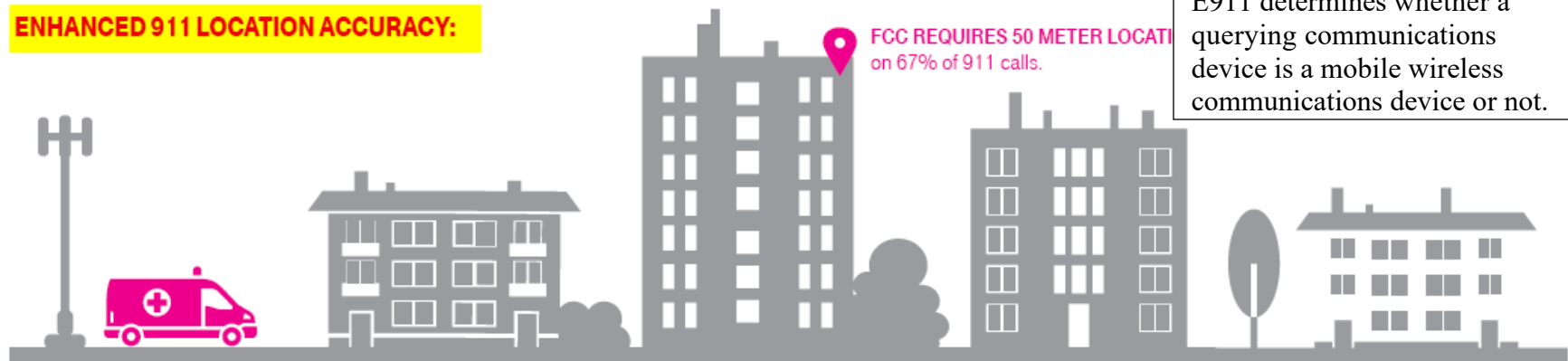
**Claim 1****Corresponding Structure in Accused Methods**

## Helping America respond to emergencies and disasters

America's 911 system provides a nationwide, emergency communications service across all 50 states. **Wireless carriers and wireline phone companies must meet specific standards for 911 calling as established by the Federal Communications Commission.**

Mobile phones play an important role in personal and public safety and can be a lifeline for people and first responders reacting to emergencies. **Enhanced 911 or E911 supports wireless phone users who dial 911 making their location known to emergency services.**

### **ENHANCED 911 LOCATION ACCURACY:**



### **Americans rely on enhanced 911 services**

**In late 2014, the wireless industry and public safety advocates reached an agreement that will lead to more accurately locating indoor 911 callers. The industry is working to provide an indoor dispatchable location or a vertical location estimate for callers in high-rise buildings.**

**Attachment 6 (Enhanced 911 for wireless callers) at 1.**

### **Looking to the future**

Next Generation 911 (NG911) will enhance the 911 system to create faster, more flexible and resilient systems to keep up with technology used by the public. **NG911 will enable emergency reporting via text, images, video and data.**

**EXHIBIT \_ – INFRINGEMENT CONTENTIONS**  
**U.S. PATENT NO. 9,918,196 – CLAIM 1**

Claim 1	Corresponding Structure in Accused Methods
	<p style="text-align: center;"><b>The 911 Act and Federal Communications Commission Regulations</b></p> <p>To assist the effort to provide comprehensive 911 services nationwide, Congress in 1999 passed the Wireless Communications and Public Safety Act (P.L. 106-81), often referred to as the 911 Act. This act mandated 911 as the national emergency number<sup>29</sup> and provided for parity of wireless 9-1-1 services with the protections and authorizations already extended to wireline services.<sup>30</sup> Among its provisions, the law required the FCC to work with the states and the many other affected parties to deploy comprehensive wireless enhanced 911 (W-E911) service. Enhanced 911 service provides 911 call centers with Automatic Number Identification (ANI) and Automatic Location Identification (ALI).<sup>31</sup> Most wireline phone services provide ANI/ALI information.<sup>32</sup></p> <p><sup>31</sup> Automatic Number Identification (ANI) recognizes and displays the telephone number from which the call is placed. Automatic Location Identification (ALI) provides—in the case of wireline—the address associated with the telephone number or—in the case of wireless—the approximate geographic coordinates of the caller.</p> <p><b>Attachment 2 (Emergency Communications: Broadband and the Future of 911 (2010)) at 7.</b></p> <p style="text-align: center;"><b>PSAP Interface</b></p> <hr style="border: 1px solid red;"/> <ul style="list-style-type: none"> <li>• <b>Wireless Providers cannot ‘push’ location information PSAP</b> <ul style="list-style-type: none"> <li>• PSAP must request (‘pull’) location from the ALI Service Provider</li> <li>• ALI Service Provider then ‘pulls’ location from Wireless Provider (GMLC/MPC)</li> </ul> </li> <li>• <b>Normal Location Process</b> <ul style="list-style-type: none"> <li>• Initial ALI Bid upon call reception at PSAP (often automated) – typically results Phase I (Cell ID) location</li> <li>• Re-bid approximately 30 seconds into call (can be manual or automated) – typically results in Phase II location estimate <ul style="list-style-type: none"> <li>• Re-bid can be timed from call reception or from previous ALI bid result – whichever is most convenient for the PSAP/CPE vendor</li> <li>• Repeat re-bid process (“mid-call location update”) as needed</li> </ul> </li> </ul> </li> </ul> <p><b>Attachment 1 (E911 Phase II Location accuracy workshop (2013)) at 2.</b></p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>T-Mobile uses ALI service in E911 services. ALI is responsible for determining whether a querying communications device is a mobile wireless communications device or not.</p> </div>

**EXHIBIT \_ – INFRINGEMENT CONTENTIONS**  
**U.S. PATENT NO. 9,918,196 – CLAIM 1**

Claim 1	Corresponding Structure in Accused Methods
<p>responsive to determining that the communications device is the mobile wireless communications device, the directional assistance service determining and using a present location of the mobile wireless communications device as a location of the communications device;</p>	<p>If the E911 service determines that the said navigation query has been initiated at a mobile wireless communications device <b>[Exhibit B]</b>, and that the said query was communicated through T-Mobile (including Metro PCS) wireless telecommunications network service (i.e. through RF signal-based communication), the E911 service determines current location of the mobile wireless communications device and uses it as the starting location for providing navigation information (instructions or directions) to travel to the destination.</p> <p>Further, E911 services determine query device is wireless or wireline. Then it determines the location of the device. If querying device is wireless device, then E911 provide the location of the mobile device to the first responder. [Refer attachment: 5 and 11]</p> <p>The following exemplifies this limitation's existence in Accused Method:</p> <div style="border: 2px solid red; padding: 10px; margin: 10px 0;"> <p style="font-size: 1.5em; font-weight: bold; margin: 0;">911 wireless services need infrastructure</p> <p>Mobile phones play an important role in personal and public safety. Mobile connectivity can be a lifeline for people in need and first responders. Enhanced or E911 seeks to improve the accuracy and reliability of wireless 911 calls and this will require network upgrades and coordination among public safety agencies, <span style="border: 1px solid red; padding: 2px;">wireline and wireless carriers</span>, and equipment manufacturers.</p> </div> <p><b>Attachment 5 (Property values &amp; wireless sites) at 2.</b></p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>T-Mobile's E911 services first determine the query device is wireless or wireline. Then it determines the location of the device.</p> </div>

**EXHIBIT \_ – INFRINGEMENT CONTENTIONS**  
**U.S. PATENT NO. 9,918,196 – CLAIM 1**

Claim 1	Corresponding Structure in Accused Methods
	<p><b>Location-Based Services</b></p> <p>If your device is turned on, our network is collecting data about the device location. We use this network location data to operate and improve our network and business, including to route wireless communications, and provide emergency responders information about how to find you when you call 911. We do not share network location data with third-parties, other than emergency responders or as required by law or emergency.</p> <p>Depending on your device, you may be able to obtain services (such as mapping or ride-sharing service) that use the location of your device. These services, referred to as Location-Based Services ("LBS"), are generally provided by third-parties in connection with apps or websites. Third-party LBS providers generally use your device operating system's location capabilities, which can determine location independent of our network, to derive device location. It is important that you understand the location capabilities and settings of your device and the privacy policies and terms under which third-party LBS are provided.</p> <p>In some cases, T-Mobile may provide LBS services. Where we do so, we will request your permission before we access precise location data to support the service. If you have previously consented to our app or service accessing precise location data, you may revoke that permission at any time through the device's operating system location preference controls or the app settings. You may also follow the standard uninstall process to remove the app from your device.</p> <p><b>Attachment 11 (T-Mobile Privacy Statement (2019)) at 10, 11.</b></p>

**EXHIBIT – INFRINGEMENT CONTENTIONS**  
**U.S. PATENT NO. 9,918,196 – CLAIM 1**

Claim 1	Corresponding Structure in Accused Methods
	<p align="center"><b>Location Technology Cascade</b></p> <hr/> <p><b>For an GPS capable handset:</b></p> <ul style="list-style-type: none"> <li>– AGPS</li> <li>– AGPS/RTT Hybrid</li> <li>– RTT</li> <li>– Cell ID</li> </ul> <div data-bbox="1249 435 1738 571" style="border: 1px solid black; padding: 5px; margin-left: 400px;"> <p>Different methods for determining the location of communications device</p> </div> <p><b>For a non-GPS capable handset:</b></p> <ul style="list-style-type: none"> <li>– UTD OA</li> <li>– Cell ID – TA</li> <li>– Cell ID</li> </ul> <p>• Result with lowest uncertainty estimate is returned to the PSAP</p> <p><b>Attachment 1 (E911 Phase II Location accuracy workshop (2013)) at 4.</b></p>

**EXHIBIT – INFRINGEMENT CONTENTIONS**  
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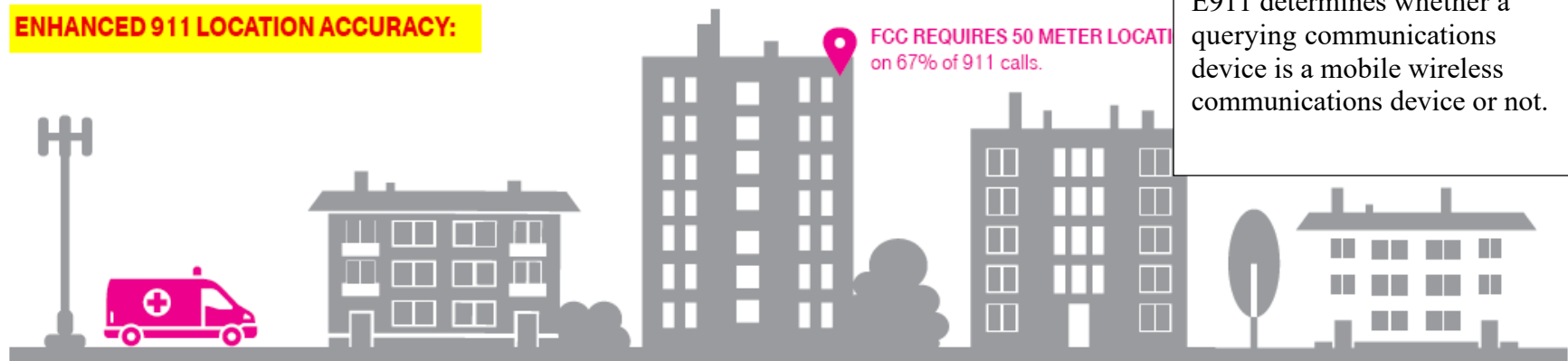
**Claim 1****Corresponding Structure in Accused Methods**

## Helping America respond to emergencies and disasters

America's 911 system provides a nationwide, emergency communications service across all 50 states. **Wireless carriers and wireline phone companies must meet specific standards for 911 calling as established by the Federal Communications Commission.**

Mobile phones play an important role in personal and public safety and can be a lifeline for people and first responders reacting to emergencies. **Enhanced 911 or E911 supports wireless phone users who dial 911 making their location known to emergency services.**

### **ENHANCED 911 LOCATION ACCURACY:**



### **Americans rely on enhanced 911 services**

In late 2014, the wireless industry and public safety advocates reached an agreement that will lead to more accurately locating indoor 911 callers. The industry is working to provide an indoor dispatchable location or a vertical location estimate for callers in high-rise buildings.

**Attachment 6 (Enhanced 911 for wireless callers) at 1.**

### **Looking to the future**

Next Generation 911 (NG911) will enhance the 911 system to create faster, more flexible and resilient systems to keep up with technology used by the public. **NG911 will enable emergency reporting via text, images, video and data.**

**EXHIBIT \_ – INFRINGEMENT CONTENTIONS**  
**U.S. PATENT NO. 9,918,196 – CLAIM 1**

Claim 1	Corresponding Structure in Accused Methods
<p>responsive to determining that the communications device is not the mobile wireless communications device, obtaining a fixed location associated with the communications device to determine the location of the communications device; and</p>	<p>As mentioned previously, the E911 is programmed to identify the “phone type” (or device type) of the communications device <b>[Exhibit B]</b> at which the said navigation query is initiated, and also to ascertain whether the communications device <b>[Exhibit B]</b> at which the said navigation query is initiated, is connected to the E911 server through T-Mobile (including Metro PCS) wireless telecommunications network service (i.e. through RF signal-based communication) or through a Wi-Fi network supported by a fixed-line or wired broadband Internet service.</p> <p>In other words, the E911 has means to determine whether a querying communications device is a mobile wireless communication device <b>[Exhibit B]</b> or not, and also whether the said communications device is connected to the E911 server through T-Mobile (including Metro PCS) wireless telecommunications network service (i.e. through RF signal-based communication) or through a Wi-Fi network supported by a fixed-line or wired broadband Internet service.</p> <p>This clearly indicates that if the said communications device is determined by E911 service to be a stationary or fixed communications device <b>[Exhibit B]</b> connected or tethered to a Wi-Fi (internet) access point, modem, router or a Wi-Fi hotspot supported by a fixed line (wired) broadband Internet Service, E911 determines the location of the said stationary or fixed communications device <b>[Exhibit B]</b> by identifying the Internet Service Provider or Wi-Fi hotspot serving the said communications device, and obtaining the stationary location of the said Wi-Fi (internet) access point, modem or router supported by the said Internet Service Provider or Wi-Fi hotspot, from a Wi-Fi database, Wi-Fi location database or a Wi-Fi hotspot database.</p> <p>Further, T-Mobile (including Metro PCS) provides E911 services as per FCC standard. Enhanced 911 service provides 911 call centers with Automatic Number Identification (ANI) and Automatic Location Identification (ALI). T-Mobile (including Metro PCS) uses ALI service provider in E911 services. In the case of wireline Automatic Location Identification (ALI) provides the address associated with the telephone number and in the case of wireless the approximate geographic coordinates of the caller. [Refer attachment 7, 1, 2]</p> <p>The following exemplifies this limitation’s existence in Accused Methods:</p>

**EXHIBIT \_ – INFRINGEMENT CONTENTIONS**  
**U.S. PATENT NO. 9,918,196 – CLAIM 1**

Claim 1	Corresponding Structure in Accused Methods
	<div data-bbox="338 248 1703 345" style="border: 2px solid red; padding: 5px;"><b>911 wireless services need infrastructure</b></div> <p data-bbox="338 345 2053 589">Mobile phones play an important role in personal and public safety. Mobile connectivity can be a lifeline for people in need and first responders. Enhanced or E911 seeks to improve the accuracy and reliability of wireless 911 calls and this will require network upgrades and coordination among public safety agencies, <span style="border: 1px solid red; padding: 2px;">wireline and wireless carriers</span>, and equipment manufacturers.</p> <div data-bbox="1100 613 1871 761" style="border: 1px solid black; padding: 5px; margin-top: 10px;"><p>T-Mobile's E911 services first determine the query device is wireless or wireline. Then it determines the location of the device.</p></div> <p data-bbox="338 761 1050 800"><b>Attachment 5 (Property values &amp; wireless sites) at 2.</b></p>

**EXHIBIT – INFRINGEMENT CONTENTIONS**  
**U.S. PATENT NO. 9,918,196 – CLAIM 1**

**Claim 1****Corresponding Structure in Accused Methods**

## Wireless 9-1-1 ~ Current Status in Florida

❖ T-Mobile has completed Phase I & II service deployment for all Florida PSAPs that have requested service to date. Still awaiting a Phase I & II request letter from Franklin County.

❖ Florida Counties with no T-Mobile coverage at this time: Gilchrist and Union.

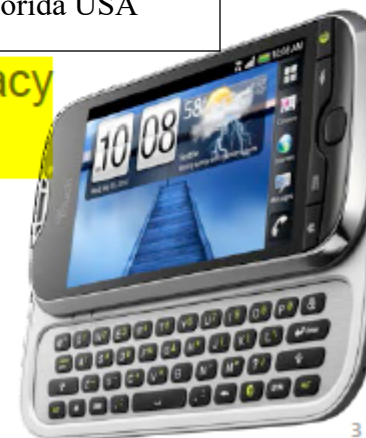
❖ The T-Mobile network processes about 90,000 wireless voice 9-1-1 calls per day, currently providing Phase I & II service to 3,600 PSAPs nationwide.

❖ Important that the PSAP calltaker perform a rebid/retransmit if the wireless 9-1-1 call arrives at the PSAP as Phase I (WPH1) to provide the Phase II data (WPH2).

T-Mobile E911 services meet the FCC standard in Florida USA

❖ T-Mobile continues to meet required location accuracy benchmarks set by the FCC on a county-by-county level.

❖ T-Mobile generates daily reports from its GMLC and reviews network performance reports to determine if there are any technical issues that need to be investigated and mitigated with the PSAP.



**Attachment 7 (T-Mobile Text to 9-1-1 Services (2014)) at 3.**

**EXHIBIT \_ – INFRINGEMENT CONTENTIONS**  
**U.S. PATENT NO. 9,918,196 – CLAIM 1**

Claim 1	Corresponding Structure in Accused Methods
	<p align="center"><b>The 911 Act and Federal Communications Commission Regulations</b></p> <p>To assist the effort to provide comprehensive 911 services nationwide, Congress in 1999 passed the Wireless Communications and Public Safety Act (P.L. 106-81), often referred to as the 911 Act. This act mandated 911 as the national emergency number<sup>29</sup> and provided for parity of wireless 9-1-1 services with the protections and authorizations already extended to wireline services.<sup>30</sup> Among its provisions, the law required the FCC to work with the states and the many other affected parties to deploy comprehensive wireless enhanced 911 (W-E911) service. Enhanced 911 service provides 911 call centers with Automatic Number Identification (ANI) and Automatic Location Identification (ALI).<sup>31</sup> Most wireline phone services provide ANI/ALI information.<sup>32</sup></p> <p><sup>31</sup> Automatic Number Identification (ANI) recognizes and displays the telephone number from which the call is placed. Automatic Location Identification (ALI) provides—in the case of wireline—the address associated with the telephone number or—in the case of wireless—the approximate geographic coordinates of the caller.</p> <p><b>Attachment 2 (Emergency Communications: Broadband and the Future of 911 (2010)) at 7.</b></p> <p align="center"><b>PSAP Interface</b></p> <hr/> <ul style="list-style-type: none"> <li>• <b>Wireless Providers cannot ‘push’ location information to the PSAP</b> <ul style="list-style-type: none"> <li>• PSAP must request (‘pull’) location from the ALI Service Provider</li> <li>• ALI Service Provider then ‘pulls’ location from Wireless Provider (GMLC/MPC)</li> </ul> </li> <li>• <b>Normal Location Process</b> <ul style="list-style-type: none"> <li>• Initial ALI Bid upon call reception at PSAP (often automated) – typically results in Phase I (Cell ID) location</li> <li>• Re-bid approximately 30 seconds into call (can be manual or automated) – typically results in Phase II location estimate <ul style="list-style-type: none"> <li>• Re-bid can be timed from call reception or from previous ALI bid result – whichever is most convenient for the PSAP/CPE vendor</li> <li>• Repeat re-bid process (“mid-call location update”) as needed</li> </ul> </li> </ul> </li> </ul> <p><b>Attachment 1 (E911 Phase II Location accuracy workshop (2013)) at 2.</b></p> <div data-bbox="1787 743 2074 1068" style="border: 1px solid black; padding: 5px; margin-top: 20px;"> <p>T-Mobile uses ALI service in E911 services. ALI is responsible for determining the location of Wireline or wireless device.</p> </div>

**EXHIBIT \_ – INFRINGEMENT CONTENTIONS**  
**U.S. PATENT NO. 9,918,196 – CLAIM 1**

Claim 1	Corresponding Structure in Accused Methods
<p>the directional assistance service providing navigation information to the communications device in response to the Internet query, wherein the navigation provides directions for proceeding from the location of the communications device to a location of the destination.</p>	<p>In response to receiving the navigation query (which includes inputting the destination) initiated at the communications device and directed via the Internet, E911 service computes and provides the navigation information (directions) to the said communications device to travel from the current location of the said communications device to the input destination.</p> <p>Further, enhanced 911 (also called E911) is a federally-mandated program that seeks to improve the accuracy and reliability of wireless 911 by providing dispatchers with additional location information. E911 is regulated by the Federal Communications Commission and is initiated by jurisdictional request. The deployment of E911 requires network upgrades and coordination among public safety agencies, wireless carriers, technology vendors, equipment manufacturers, and local wireline carriers.</p> <p>The following exemplifies this limitation's existence in Accused Methods:</p> <div data-bbox="331 641 2068 1185"> <p><b>WIRELESS INFRASTRUCTURE AT WORK:</b></p> <p><b>PACKAGES TRACKED AND DELIVERED</b> Delivery service locates home. Package location and status updated in real-time.</p> <p><b>SMART CITIES</b> IoT (Internet of Things) technology relays real-time meter information to utility companies and enables efficient use of city resources.</p> <p><b>EMERGENCY NOTIFICATION</b> E911 call placed. First responders locate the person in need of help.</p> <p><b>FIND PARKING</b> Nearby available parking spots found by driver.</p> <p><b>LOCATE BUSINESSES ON-THE-GO</b> Information and map directions relayed to customers.</p> <p><b>First responders locate the person in need to help on their communication device.</b></p> <p><b>Attachment 5 (Property values &amp; wireless sites) at 1.</b></p> </div>

**EXHIBIT \_ – INFRINGEMENT CONTENTIONS**  
**U.S. PATENT NO. 9,918,196 – CLAIM 1**

Claim 1	Corresponding Structure in Accused Methods
	<p>Over the past twenty years, wireless carriers, manufacturers, and the public safety community, have collaborated to develop solutions for a number of exceptionally difficult problems, including how to route cellular 911 calls to the correct public safety answering point (PSAP), to complete 911 calls for non-subscribers, and to allow first responders to locate callers who are unable to tell the PSAP where they are. As technologies and wireless coverage have improved, the carriers and PSAPs have continued to enhance these solutions, deploying increasingly robust location, routing, and call completion capabilities.</p> <p><b>Attachment 10 (A Wireless 911 Indoor Location (2014)) at 1.</b></p> <p>In addition to implementing dispatchable location solutions for indoor calls, the Roadmap also contains clear, measurable commitments to improve traditional latitude/longitude location solutions for outdoor calls and for indoor calls where a dispatchable location may not be available. In this regard, the agreement provides for developing, testing and deploying technologies that will improve the accuracy and reliability of location information anytime somebody calls for help, by using the most advanced satellite navigation systems and features of our LTE broadband network, as well as Wi-Fi and Bluetooth beacons.</p> <p><i>Id. at 2.</i></p>

**EXHIBIT \_ – INFRINGEMENT CONTENTIONS**  
**U.S. PATENT NO. 9,918,196 – CLAIM 1**

Claim 1	Corresponding Structure in Accused Methods
	<p align="center"><b>Information Provided Upon PSAP Request</b></p> <hr/> <p><b>Location Estimate</b></p> <ul style="list-style-type: none"> <li>• Latitude/Longitude estimate of caller (Phase II), or</li> <li>• Serving Cell/Sector Information (Phase I) – typically in the form of a street address</li> <li>• Class of Service (COS) <ul style="list-style-type: none"> <li>• “WRLS” – Phase I Result from a Phase I Deployment</li> <li>• “WPH1” – Phase I Fallback for a Phase II Deployment</li> <li>• “WPH2” – Phase II Result</li> </ul> </li> </ul> <p><b>Uncertainty Estimate</b></p> <ul style="list-style-type: none"> <li>• Provided with each E911 location estimate to all PSAPs requesting this option – allows the calltaker to gauge the quality of the location estimate in real time</li> <li>• Radius (in meters) of a circle centered at the reported position (latitude/longitude) within which the caller’s actual location is expected to fall 90% of the time (where 90% is the associated confidence level)</li> <li>• Confidence level is suppressed (not transmitted to the PSAP) – per public safety request</li> <li>• 90% confidence level is recommended by ESIF and public safety</li> </ul> <p><b>Attachment 1 (E911 Phase II Location accuracy workshop (2013)) at 3.</b></p>

**EXHIBIT \_ – INFRINGEMENT CONTENTIONS**  
**U.S. PATENT NO. 9,918,196 – CLAIM 1**

Claim 1	Corresponding Structure in Accused Methods
	<div data-bbox="508 245 1150 363"> <p><b>330 Million Americans Rely on Enhanced 911 Services</b></p> </div> <div data-bbox="508 389 1180 604"> <p>Mobile phones play an important role in personal and public safety, allowing people to easily reach out to emergency services, family or friends. Mobile connectivity can be a lifeline for people and first responders when reacting to natural and man-made disasters, as well as accidents and threats to communities.</p> </div> <div data-bbox="508 643 1180 812"> <p>Enhanced 911 (also called E911) is a federally-mandated program that seeks to improve the accuracy and reliability of wireless 911 by providing dispatchers with additional location information. E911 is regulated by the Federal Communications Commission and is initiated by jurisdictional</p> </div> <div data-bbox="344 857 648 1065"> <p>First responder gets the location information on their communication device.</p> </div> <div data-bbox="648 898 1150 1021"> <p>ment of E911 requires network upgrades and coordination safety agencies, wireless carriers, technology vendors, manufacturers, and local wireline carriers.</p> </div> <div data-bbox="508 1089 1136 1338"> <p>240 million calls are made to 911 in the U.S. each year, and in many areas 80% or more are from wireless devices. (National Emergency Number Association, NENA)</p> </div> <div data-bbox="321 1338 1108 1372"> <p><b>Attachment 4 (Smart Communities plan for mobile) at 1.</b></p> </div> <div data-bbox="1207 245 1554 298"> <p><b>Looking to the Future</b></p> </div> <div data-bbox="1207 334 1425 368"> <p>According to 911.gov:</p> </div> <div data-bbox="1207 407 1890 618"> <p><i>For more than 40 years, the 911 system has served the needs of the public in emergencies. Next Generation 911 (NG911) will enhance the 911 system to create a faster, more flexible, resilient, and scalable system that allows 911 to keep up with communication technology used by the public.</i></p> </div> <div data-bbox="1207 657 1860 872"> <p><i>While the technology to implement NG911 systems is available now, the transition to NG911 involves much more than just new computers. Implementing NG911 will include activities of many people, who will coordinate efforts to plan and deploy a continually evolving system of hardware, software, standards, policies, protocols and training.</i></p> </div> <div data-bbox="1207 911 1890 990"> <p><i>The National 911 Program supports the effort of jurisdictions at all levels of government as they consider the transition to NG911.</i></p> </div> <div data-bbox="1207 1029 1845 1242"> <p>New technologies and policies will continue to enhance these capabilities. In fact, a roadmap agreement reached by the wireless industry and public safety advocates in late 2014 will lead to more accurately locating indoor 911 callers, as well as providing a vertical estimate for callers in high-rise buildings.</p> </div>